NORTH RIVER

WATERSHED

INVENTORY AND ASSESSMENT

PREPARED BY:

H. Ross Dames
and
David J. Neuswanger
Missouri Department of Conservation
For additional information contact
Fisheries Regional Supervisor
Missouri Department of Conservation
2500 South Halliburton, Kirksville, MO 63501

EXECUTIVE SUMMARY

The North River basin lies in the eastern section of the Glaciated Plains Division of Missouri, also known as the Dissected Till Plains. The basin drains 381 square miles (243,857 acres) of northeastern Missouri covering parts of five counties (Knox, Shelby, Monroe, Marion, Ralls). There are 22 third-order and larger streams in the basin. The North River, a sixth-order stream and the largest within the basin, originates in Knox County and flows southeast approximately 78 miles before entering the Upper Mississippi River at River Mile 321.

The watershed lies within two Major Land Resource Areas. The lower half of the basin is located within the Central Mississippi Valley Wooded Slopes. Most of this area has rolling, narrow ridgetops and moderately steep to steep ridge slopes and valley sides. The upper half of the basin lies within the Central Claypan region. This region is nearly

level to slightly rolling. With the exception of the cherty Goss soils in the lower basin, the soil associations of the entire basin are characterized by slow subsoil permeability.

When the first settlers arrived in the basin, approximately 50% of the land was tall grass prairie. Agriculture became the dominant land use and continues to this day. Approximately 117,730 acres (48%) are cultivated for crops, and another 69,195 acres (28%) are in pasture/grassland. Only about 21% of the basin is forested. The impact of agriculture on basin streams is significant. Small channelization of streams and sedimentation from poor land practices continue to be the major management problems in the basin. Excessive sediment from non-point sources is the main water quality concern. Both channelization and sedimentation reduce aquatic habitat and disrupt ecological processes within these streams.

A total of 54 fish species from 12 families has been collected in the North River basin. From a basin wide perspective, the community includes fishes representative of the Prairie, Lowland, Ozark, and Big River faunal regions. According to Pflieger (1971), 37% are wide-ranging, 12% are big river species, 27% are Prairie species, 29% are Ozark species, and 8% are representative of the Lowlands. The dominant fish families were the minnows (20 species), sunfishes (7 species), catfishes (6 species), perches (6 species), and suckers (6 species). The most abundant and common species collected in recent surveys was the red shiner, which comprised 29% of all fish collected and occurred at 89% of all sites. The redfin shiner and bluntnose minnow were the second and third most abundant species, comprising 13% and 11% of all fish collected and occurring at 81% and 84% of all sites, respectively. Other commonly occurring species include the following: bigmouth shiner, sand shiner, central stoneroller, johnny darter, orangethroat darter, and green sunfish. Five species found in the basin prior to 1990 and not found in recent surveys include the following: southern redbelly dace last collected in 1987, ghost shiner last collected in 1956, Mississippi silvery minnow last collected in 1941, tadpole madtom last collected in 1987, and blackstripe topminnow last collected in 1941.

Public use of North River watershed streams is generally low, partially because most people are unaware of the high-quality fishing/floating opportunities that exist there. People who enjoy Ozark streams may have stereotyped northern Missouri streams as turbid, unattractive ditches that contain primarily non-game fish. While this may be true

of some highly altered channels in the prairie region, several reaches of the North River and its tributaries resemble Ozark streams. Many reaches support diverse aquatic communities that provide good fishing or an even greater variety of sport fish than exist in many Ozark streams.

TABLE OF CONTENTS

All information may be reached from the Table of Contents or from the chapter links a the bottom of the following pages :

LIST OF TABLES

LIST OF FIGURES